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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,547

08/16/2006

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EXAMINER

MOON, SEOKYUN

ART UNIT

PAPER NUMBER

2629

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DELIVERY MODE

04/13/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,547	Applicant(s) CLARKE ET AL.	
	Examiner SEOKYUN MOON	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,7-9,13 and 15-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7-9,13,15-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Rejection of Claims in the Last Office Action

1. Claims 1, 2, 9, 13, and 15-17 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,488,785 by Kohashi in view of U.S. Patent No. 6,525,866 by Lin et al. (herein after, Lin) and U.S. Patent No. 7,119,161 by Lawandy et al. (herein after, Lawandy).

Claims 7 and 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kohashi, Lin, and Lawandy, and further in view of Steckl et al. (U.S. Patent No. 7,123,796, herein after, Steckl).

Response to Arguments

2. The Applicants' arguments filed February 08, 2011 have been fully considered.

Regarding the rejection of claim 1, the Applicants argue that Kohashi does not teach the claim limitation, "a discrete drop of liquid". Specifically, the Applicants argue [Remarks: pg 4 5th full paragraph], "In the rejection, the Examiner points to what he suggests is a discrete drop of liquid, but Applicants find no support in Kohashi for the Examiner's assertion, and there would be no suggestion to one skilled in the art that the Examiner's arbitrary circled area is equivalent to a discrete drop of liquid".

Examiner respectfully disagrees.

Examiner respectfully points out that there is no definite maximum and/or minimum quantity of a liquid to be construed as a drop of the liquid. Furthermore, the specification of the instant Application does not explicitly define the quantity of a liquid to be construed as a drop of

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the liquid. Accordingly, based on the broadest reasonable interpretation of the claim limitation, “a discrete drop of liquid”, Examiner respectfully submits that it is reasonable to construe the liquid in the display element of Kohashi as a discrete drop of a liquid. Examiner respectfully requests the Applicants to provide an evidence and/or an explanation how or why the liquid of Kohashi cannot be construed as a discrete drop of a liquid.

Regarding the Applicants’ statement, “Kohashi does not provide any teaching that its porous member should include conductive particles, a lyphobic covering or an electrically insulating covering, let alone the combination of all three” [Remarks: pg 4 6th full paragraph], Examiner respectfully submits that if Kohashi teaches that the porous member should include all three members, there would be no reason to use secondary references to reject claim 1.

Regarding the combination of Kohashi and Lin, the Applicants argue that the teachings of Kohashi and Lin cannot be combined because the type of the display of Lin is fundamentally different from the type of the display of Kohashi [Remarks: pg 4 the last partial paragraph].

Examiner respectfully disagrees.

The basis of combining the teaching of Kohashi and the teaching of Lin is not incorporating the whole structure of the display of Lin into the display of Kohashi, but is including conductive particles containing colors in the display of Kohashi to enhance the colors of the display. In other words, the combination of Kohashi and Lin was not based on applying the teaching of Lin, moving particles within the display, to the display of Kohashi.

Regarding the lyophobic and electrically insulating covering, the Applicants point out [Remarks: pg 5 1st full paragraph], “The Examiner further states that it is well known in the art to cover particles with a polymer to prevent the particles from coagulation. The Examiner cites no

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reference. Even assuming for the moment that this statement is relevant, the combination of Lin and Kohashi (discussed above) and this last assertion still fails to teach the present invention."

However, Examiner respectfully submits that the Applicants have failed to explain or provide evidence as to how the combination of the cited references does not teach the claim limitation. Furthermore, MPEP 2144.03 Section C discloses, "To adequately traverse such a *finding, an applicant must specifically point out the supposed errors in the examiner's action*, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art" and "*If applicant does not traverse the examiner's assertion of official notice or applicant's traverse is not adequate, the examiner should clearly indicate in the next Office action that the common knowledge or well-known in the art statement is taken to be admitted prior art because applicant either failed to traverse the examiner's assertion of official notice that the traverse was inadequate*". Since the Applicants have clearly failed to traverse the Examiner's Official Notice, the Examiner's Official Notice taken in the last Office action is taken to be admitted prior art, in this Office action.

Regarding the lyophobic and electrically insulating covering, the Applicants further argue [Remarks: pg 5 1st full paragraph] that a lyophobic and electrically insulating covering is used not to prevent particles from coagulation, but is to enable the display element to work. However, Examiner respectfully submits that the claim does not disclose anything regarding the function of the lyophobic and electrically insulating covering.

The Applicants' arguments regarding Lawandy will not be discussed in this Office action because the claim limitation corresponding to the teaching of Lawandy has been removed.

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Regarding the rejection of claim 7, the Applicants argue [Remarks: pg 6 2nd full paragraph], "Applicant fail to find any disclosure in Steckl that specifically teaches that scattering layer 26 acts also as an encapsulation layer".

Examiner respectfully disagrees.

According to Merriam-Webster Online dictionary, the word, "encapsulate" is defined as "to enclose in". "encapsulate." Merriam-Webster Online Dictionary. 2011. Merriam-Webster Online. 07 April 2011 <<http://www.merriam-webster.com/dictionary/encapsulation>> Since the "light scattering layer 26" encloses the display element, it would be reasonable to construe the "light scattering layer 26" as the claimed encapsulation layer.

For the foregoing reasons, Examiner respectfully submits that none of the Applicants' arguments are persuasive.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

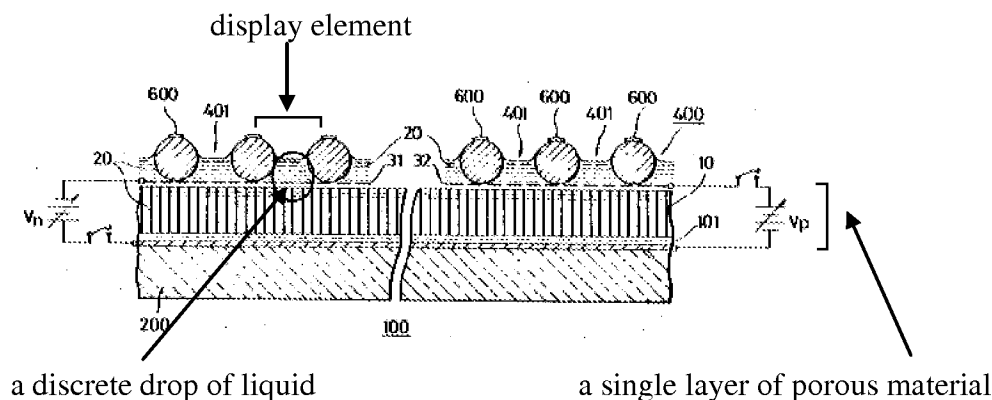
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 2, 9, 13, and 15-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohashi in view of Lin.

As to **claim 1**, Kohashi teaches a display element [drawing 1 provided below, which is same as figure 1 of Kohashi] comprising a single layer of porous material, a discrete drop of liquid and means ("Vn" or "Vp") for connecting a voltage supply to the layer, whereby an

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application of a voltage between the liquid and the porous layer, the drop of liquid moves into the layer [drawing 2c and col. 3 line 65 – col. 4 line 5], the drop moving back out of the layer upon removal of the voltage [drawing 2a and col. 3 lines 28-35], the movement of the liquid effecting an optical change when viewed from above the porous layer.

Drawing 1

Kohashi does not teach the layer comprising a plurality of conductive particles covered with a lyophobic and electrically insulating covering.

However, Lin teaches the concept of including a plurality of conductive particles [col. 2 lines 34-38] in a layer of a display [col. 2 lines 26-38].

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the plurality of conductive particles of Lin in the layer of Kohashi, in order to allow the layer of Kohashi to display different colors.

Kohashi as modified by Lin does not expressly teach that the plurality of conductive particles is covered with a lyophobic and electrically insulating covering.

However, Examiner takes Official Notice that it is well known in the art to cover particles with a polymer to prevent the particles from coagulation.

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Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display element of Kohashi as modified by Lin to cover each of the particles with a polymer, in order to prevent the particles from coagulation.

As to **claim 2**, Kohashi as modified above teaches that the conductive particles are metallic [Lin: col. 2 lines 34-38].

As to **claim 9**, Kohashi as modified above teaches that the porous layer has a pore size greater than 30 nm and less than 2 μm [Kohashi: col. 2 lines 30-33].

As to **claim 13**, Kohashi as modified above teaches that the display element includes means (the switching unit shown on figure 1 of Kohashi) for connecting each element to a circuit to create a matrix display [Kohashi: fig. 1].

As to **claim 15**, Kohashi as modified above teaches that the display element is environmentally sealed [drawing 1 provided on page 6 of this Office action].

As to **claim 16**, Kohashi as modified above teaches that the lyophobic and electrically insulating covering is a polymer, a polyelectrolyte, a fluoropolymer, a self assembled monolayer or an inorganic shell.

As to **claim 17**, Kohashi as modified above teaches that the materials of the porous layer [drawing 1 provided on page 6 of this Office action] includes a coated material onto a support material (Note that, in the apparatus of Kohashi as modified above, the porous layer includes a plurality of particles each of which is formed of organic or inorganic particle covered by a conductive shell. Examiner construed the conductive shell as the claimed materials and the particle as the claimed support material.).

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5. **Claims 7 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohashi and Lin as applied to claims 1, 2, 9, and 13 above, and further in view of Steckl et al. (U.S. Patent No. 7,123,796, herein after “Steckl”).

As to **claims 7 and 8**, Kohashi as modified by Lin does not expressly teach that the drop of liquid is encapsulated by a flexible and a transparent membrane.

However, Steckl teaches the concept of encapsulating a light element (“photoluminescent layer 24”) [figs. 1 and 2] of a display by a flexible and transparent membrane (“transparent scattering layer 26”) [figs. 1 and 2].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display element of Kohashi as modified by Lin to encapsulate the drop of the liquid by a flexible and transparent membrane, as taught by Steckl, in order to prevent the drop of the liquid being exposed to air.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEOKYUN MOON whose telephone number is (571)272-5552. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 572-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

April 08, 2011

/Seokyun Moon/

Examiner, Art Unit 2629